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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/587,972

08/03/2006

Markus Schutte

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11/04/2008

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ALEXANDRIA, VA 22314

EXAMINER

WINKLER, MELISSA A

ART UNIT

PAPER NUMBER

1796

NOTIFICATION DATE

DELIVERY MODE

11/04/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/587,972	<b>Applicant(s)</b> SCHUTTE ET AL.	
	<b>Examiner</b> MELISSA WINKLER	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 12-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 12 – 15, 25 – 27, 31, and 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2033/0162931 to Bleys et al. in view of WO 01/32735 to Parfondry et al.

**Regarding Claims 12 and 14.** Bleys et al. teach polyurethane foam prepared by reacting a polyisocyanate and an isocyanate-reactive composition (Paragraphs 7, 42, and 43). The polyisocyanate may be a polyisocyanate prepolymer (Paragraphs 20 - 22). The isocyanate-reactive composition comprises a polyether polyol, an isocyanate-reactive chain extender and other isocyanate-reactive compounds (Paragraph 7). The polyether polyol ("Polyol 1") has an ethylene oxide content of 60 – 90% by weight and an average nominal functionality preferably in the range of 2 - 4 (Paragraph 26). The other isocyanate-reactive compounds may include polyoxyethylene/polyoxypropylene

polyols having an oxyethylene content of 60 – 90% by weight and an average nominal functionality preferably in the range of 2 – 4 (Paragraph 28).

Bleys et al. do not expressly teach at least 5% weight of the ethylene oxide is present in either polyol as an end cap. However, Parfondry et al. also teach a polyurethane foam prepared from an isocyanate-reactive composition comprising a blend of polyether polyols (polyols “b1” and “b2”) prepared from ethylene oxide and propylene oxide. Both may be tipped/capped with ethylene oxide (Page 6, Lines 6 – 29). Polyol “b2” has a tipped/capped ethylene oxide content of 10 – 20% by weight (Page 6, Lines 11 – 29). Bleys et al. and Parfondry et al. are analogous art as they are from the same field of endeavor, namely polyurethane foams. At the time of invention, it would have been obvious to a person of ordinary skill in the art to cap the polyether polyols taught by Bleys et al. with ethylene oxide as taught by Parfondry et al. The motivation would have been that the capping polyether polyols with ethylene oxide in the amount taught by Parfondry et al. effectively enhances their reactivity with isocyanate.

**Regarding Claim 13.** Bleys et al. teach the foam of Claim 12 wherein the isocyanate-reactive composition comprises 80 – 100% by weight polyether polyol (“Polyol 1”) and 20 – 0% by weight other isocyanate-reactive compounds, such as the polyoxyethylene/polyoxypropylene polyols described in Claim 12 above (Paragraph 7).

In Example 2, the chain extender 1,4-butanediol is used in an amount of 10 parts by weight per 90 parts by weight polyol.

**Regarding Claim 15.** Bleys et al. teach the foam of Claim 12 but are silent regarding the claimed properties. Consequently, the Office recognizes that all of the claimed effects or physical properties are not positively stated by the reference(s). However, the reference(s) teaches all of the claimed ingredient(s). Therefore, the claimed effects and physical properties - i.e. a shore hardness in the range of 20 – 90 A, a tensile strength of up to 20 N/mm<sup>2</sup>, an elongation of up to 800%, and a tear propagation resistance up to 45 N/mm - would implicitly be achieved by a composition with all the claimed ingredients. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

**Regarding Claim 25.** Bleys et al. teach the foam of Claim 12 is an elastomeric foam (Paragraphs 7, 42, and 43).

**Regarding Claim 26.** Bleys et al. teach the foam of Claim 12 wherein the polyisocyanate prepolymer may be prepared from 4,4'-MDI (Paragraphs 20 - 22).

**Regarding Claim 27.** Bleys et al. teach the foam of Claim 12 wherein the polyisocyanate prepolymer has an isocyanate content of 20% by weight or more (Paragraph 22).

**Regarding Claims 31 and 32.** Bleys et al. teach the foam of Claim 12 is prepared at an isocyanate index in the range of 85 to 120 (Paragraph 43).

**Claims 16 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2033/0162931 to Bleys et al. in view of WO 01/32735 to Parfondry et al., as applied to Claim 12 above, and further in view of US 2002/0193493 to Symons.

**Regarding Claims 16 and 17.** Bleys et al. teaches the foam of Claim 12 may comprise fillers (Paragraph 34) but does not expressly teach such fillers may be exfoliated sheet silicates. However, Symons teaches a product prepared with vermiculite, a sheet silicate from the mica family, preferably in its exfoliated foam (Paragraph 39). Bleys et al. and Symons are analogous art as they are from the same field of endeavor, namely compositions containing thermosetting resin compositions. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use exfoliated sheet silicates to prepare the foam taught by Bleys et al. The motivation would have been exfoliated vermiculite is cited by Symons as a preferred additive for preparing final products with enhanced dimensional stability and shock

resistance (Paragraphs 33 and 39), both properties that would be desirable in shoe soles made from the foam taught by Bleys et al. (Paragraphs 44 and 46).

**Claims 19 – 24 and 28 - 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2033/0162931 to Bleys et al. in view of WO 01/32735 to Parfondry et al., as applied to Claim 12 above, and further in view of 6,031,010 to Lin.

**Regarding Claims 19, 20, and 28 - 30.** Bleys et al. teach the foam of Claim 12 may be prepared as a shoe sole (Paragraphs 44 and 46).

Bleys et al. do not expressly teach the shoe sole has density in the claimed range. However, Lin also teaches a polyurethane foam which is prepared to have a density of 0.1 to about 1.1 spg (about 100 g/L - 1000 g/L) (Column 12, Line 56 – Column 13, Line 3). Bleys et al. and Lin are analogous art as they are from the same field of endeavor, namely polyurethane foams prepared from blends of polyether polyols. At the time of invention, it would have been obvious to a person of ordinary skill in the art to adjust the amount of blowing agent used in preparing the foam taught by Bleys et al. such that a foam with a density in the range taught by Lin is produced. The motivation would have been that the density taught by Lin is suitable for foams to be used as shoes soles.

**Regarding Claims 21 - 24.** Bleys et al. teach the foam of Claims 19 and 20 may be formed as a shoe sole (Paragraphs 44 and 46) but does not expressly quantify the level

of swelling in the shoe sole or indicate it is hydrolysis-stable. Consequently, the Office recognizes that all of the claimed effects or physical properties are not positively stated by the reference(s). However, the reference(s) teaches all of the claimed ingredient(s). Therefore, the claimed effects and physical properties, i.e. the claimed swell-resistant properties and hydrolysis-stability, would implicitly be achieved by a composition with all the claimed ingredients. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

**Claim 18** is rejected under 35 U.S.C. 103(a) as being unpatentable over US 2033/0162931 to Bleys et al. in view of WO 01/32735 to Parfondry et al.

**Regarding Claim 18.** Bleys et al. teach a process of making a polyurethane foam in which a polyisocyanate and isocyanate-reactive composition are reacted (Paragraphs 7, 42, and 43). The polyisocyanate may be a polyisocyanate prepolymer (Paragraphs 20 - 22). The isocyanate-reactive composition comprises a polyether polyol, an isocyanate-reactive chain extender and other isocyanate-reactive compounds (Paragraph 7). The polyether polyol ("Polyol 1") has an ethylene oxide content of 60 – 90% by weight and



an average nominal functionality preferably in the range of 2 - 4 (Paragraph 26). The other isocyanate-reactive compounds may include polyoxyethylene/polyoxypropylene polyols having an oxyethylene content of 60 – 90% by weight and an average nominal functionality preferably in the range of 2 – 4 (Paragraph 28).

Bleys et al. do not expressly teach at least 5% weight of the ethylene oxide is present in either polyol as an end cap. However, Parfondry et al. also teach a polyurethane foam prepared from an isocyanate-reactive composition comprising a blend of polyether polyols (polyols “b1” and “b2”) prepared from ethylene oxide and propylene oxide. Both may be tipped/capped with ethylene oxide (Page 6, Lines 6 – 29). Polyol “b2” has a tipped/capped ethylene oxide content of 10 – 20% by weight (Page 6, Lines 11 – 29). At the time of invention, it would have been obvious to a person of ordinary skill in the art to cap the polyether polyols taught by Bleys et al. with ethylene oxide as taught by Parfondry et al. The motivation would have been that the capping polyether polyols with ethylene oxide in the amount taught by Parfondry et al. effectively enhances their reactivity with isocyanate.

*Response to Arguments*

Applicant's arguments, see Page 9, filed June 19, 2008, with respect to the rejection(s) of claim(s) 12 - 24 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of US 2033/0162931 to Bleys et al. and WO 01/32735 to Parfondry et al.

*Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA WINKLER whose telephone number is (571)270-3305. The examiner can normally be reached on Monday - Friday 7:30AM - 5PM E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo, Ph.D./  
Supervisory Patent Examiner, Art Unit 1796

MW  
October 15, 2008